

Claims

1. A handling device for the repositioning of parts
10 comprising a pivot arm able to be driven by a drive means to
perform an oscillating movement about a stationary first
pivot axis, a handling part serving for carrying a gripper,
which while performing a second pivot movement is able to be
15 pivoted about a stationary second pivot axis and furthermore
is able to be set radially in relation to the second pivot
axis while performing a linear stroke, comprising a path
setting cam extending at least partly around the first pivot
axis, and having two linear terminal sections, the handling
part being engaged with the path setting cam by means of a
20 cam follower, the cam follower being able to be moved
relatively to the pivot arm radially as regards its first
pivot axis and the pivot arm so acts, during its first
pivoting movement, in a driving manner on the cam follower
that same is shifted along the path setting cam and
25 accordingly the handling part moves, during each handling
cycle, along a handling path, which has two linear terminal
sections, in which the handling part respectively performs
exclusively a linear stroke.

2. The handling device as set forth in claim 1, wherein the two linear terminal sections of the path setting cam extend at a right angle to one another.

5 3. The handling device as set forth in claim 1, wherein the longitudinal axes of the two linear terminal sections of the path setting cam meet at a common point on the second pivot axis.

10 4. The handling device as set forth in claim 1, wherein the pivot arm so engages an entrainment member arranged on the handling part for drivingly acting on the cam follower that the entrainment member is kinematically coupled with the pivot arm in the direction of the first pivotal movement
15 while however being able to move radially in relation to the first pivot axis in relation to the first pivot axis.

 5. The handling device as set forth in claim 4, wherein the cam follower and the entrainment member lie in sequence
20 on a common entrainment axis parallel to the first and the second pivot axis.

 6. The handling device as set forth in claim 1, comprising a loading means pivoting with the pivot arm and
25 which takes effect between the pivot arm and the cam follower and biases the cam follower constantly against a flank of the path setting cam.

7. The handling device as set forth in claim 1, wherein

the handling part is a component of a pivotally moving handling arm, the handling arm additionally having a bearing part able to pivot to define the second pivot axis, on which bearing part the handling part is arranged in a linearly adjustable manner for the definition of the axis of the linear stroke movement.

8. The handling device as set forth in claim 7, wherein the path setting cam is of slotted design and the cam follower fits into the path setting cam, and to the side adjacent to at least one of the linear terminal sections of the path setting cam abutment means are provided, on which in the terminal position the bearing part rest laterally and the same is so designed that the cam follower is thrust against the flank on the other side of the path setting cam.

9. The handling device as set forth in claim 1, further comprising shock absorber means, which are associated with the two linear terminal sections of the path setting cam and cooperate with the handling part, when same moves into the respective terminal position as part of the linear stroke movement.

10. The handling device as set forth in claim 1, wherein the path setting cam extends between the first and the second pivot axis. the first pivot axis being located on the concave side of the curvature and the second pivot axis being located of the convex side of the curvature.

11. The handling device as set forth in claim 1,
wherein the second pivot axis is placed as a linear
extension of the linear terminal sections of the path
setting cam, the linear terminal sections having their
5 closed ends facing away from the second pivot axis.

12. The handling device as set forth in claim 1,
wherein the first pivot axis is placed between the path
setting cam and the second pivot axis.

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13. The handling device as set forth in claim 1,
wherein the second pivot axis is placed as a linear
extension of the linear terminal sections path setting cam
the sections having their closed ends directed toward the
15 second pivot axis.

14. The handling device as set forth in claim 12,
wherein the first pivot axis is approximately surrounded by
the path setting cam, the second pivot axis being attached
20 in the open region between the two linear terminal sections
of the path setting cam.

15. The handling device as set forth in claim 1,
wherein the angle between the two linear terminal sections
25 of the path setting cam may be varied.

16. The handling device as set forth in claim 1,
wherein at least one and preferably at least each of the two
linear terminal sections of the path setting cam is able to

be pivoted about a pivot center lying on the second path setting cam in relation to the respectively other linear terminal section and is able to be positioned in a different angular position.

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17. The handling device as set forth in claim 16, wherein the longitudinal axes of the two linear terminal sections of the path setting cam intersect with the second pivot axis irrespectively of the instantaneous angular position.

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18. The handling device as set forth in claim 16, wherein the pivoting terminal section of the path setting cam is located on a cam member which is pivotally arranged on a support member in relation to which the first and the second pivot axis are arranged in a stationary fashion, the pivot center being preferably arranged on the second pivot axis.

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19. The handling device as set forth in claim 18, wherein the two linear terminal sections of the path setting cam are provided on separate, cam members able to be set independently from each other in relation to the support body.

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20. The handling device as set forth in claim 18, comprising circularly arcuate guide means for pivotally bearing the respective cam member in relation to the support body.